

What is claimed is:

Sub A1 -
1. A method of inhibiting angiogenesis in a subject comprising decreasing syndecan-4 expression, level, or activity, in the subject.

2. The method of claim 1, wherein syndecan-4 expression, level, or activity, is decreased by administering an agent which decreases syndecan-4 expression.

3. The method of claim 1, wherein the agent which decreases syndecan-4 expression, level, or activity, is selected from the group consisting of: a syndecan-4 nucleic acid molecule that can bind to cellular syndecan-4 mRNA and inhibit expression of the protein, an antibody that specifically binds to syndecan-4 protein, and an agent which decreases syndecan-4 nucleic acid expression.

4. The method of claim 1, wherein the agent which decreases syndecan-4 expression, level, or activity, is selected from the group consisting of: peptides that bind to syndecan-4 (either intracellularly or extracellularly) and inhibit it.

5. The method of claim 4 wherein the peptide is a soluble inhibitory form of a naturally occurring ligand.

6. The method of claim 4 wherein the peptide is a soluble inhibitory form of fibronectin or a fragment thereof.

Sub A2 -
7. In a preferred embodiment expression, level, or activity is decreased in a fibroblast or an endothelial cell.

8. The method of claim 1, wherein the subject has a disorder or condition characterized by unwanted angiogenesis or which can be treated by decreasing angiogenesis.

9. The method of claim 1, wherein the subject has a disorder characterized by unwanted cell proliferation.

10. The method of claim 1, wherein the subject has cancer.


11. The method of claim 10, wherein the cancer is characterized by the presence of a solid tumor.

12. The method of claim 1, further comprising inhibiting a syndecan-4 co-receptor.

13. The method of claim 12, wherein the co-receptor is FGF-2 receptor.

14. The method of claim 13, wherein an anti-FGF-2 receptor antibody, anti-FGF-2 antibody, soluble ligand binding fragment of the FGF-2 receptor, or soluble co-receptor binding fragment of FGF-2 is administered to the subject.

15. A method of identifying a compound which can be used to inhibit angiogenesis, comprising:

providing a cell, a tissue, or a subject; 
treating the cell or the tissue, or the subject with a candidate compound; and
determining the level of syndecan-4 nucleic acid or syndecan-4 protein, wherein the ability of the compound to decrease syndecan-4 nucleic acid or syndecan-4 protein is indicative of a compound which can be used to inhibit angiogenesis.

16. The method of claim 15, further comprising evaluating a control cell, tissue or subject that is not treated with the candidate compound.

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